

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/015155

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ H01L31/12, H01L27/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ H01L31/00-31/173, H01L27/14-27/15, H01L33/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Toroku Jitsuyo Shinan Koho	1994-2005
Kokai Jitsuyo Shinan Koho	1971-2005	Jitsuyo Shinan Toroku Koho	1996-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	JP 5-67769 A (Sony Corp.), 19 March, 1993 (19.03.93), & JP 5-67760 A & US 5357122 A	1-2, 5-7 3-4, 8-13
Y	JP 4-61175 A (Nippon Telegraph And Telephone Corp.), 27 February, 1992 (27.02.92), (Family: none)	3-4, 9
Y	JP 6-275870 A (Fujitsu Ltd.), 30 September, 1994 (30.09.94), & DE 4402422 A & US 5644667 A & US 5764832 A	10-13

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
21 January, 2005 (21.01.05)

Date of mailing of the international search report
08 February, 2005 (08.02.05)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 10-3335383 A (Matsushita Electric Industrial Co., Ltd.), 18 December, 1998 (18.12.98), & EP 881671 A & US 6184066 B & US 6423561 B	1-13

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

(See extra sheet.)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.: 1-13 (Only the required additional search fee was paid by the applicant for the two inventions.)
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

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Continuation of Box No.III of continuation of first sheet (2)

(1) Claims 1-16 define inventions in which the heights of two or more optical elements are specified. Contrarily, claims 17-26 define inventions relating to a method of fabricating a necessary optical element from an optical element array. Therefore, these inventions do not involve a special technical feature.

(2) Regarding to claims 1-16, there are prior art documents such as JP 5-67769 A ("document 1"), which discloses a three-dimensional electronic integrated circuit device wherein a light-emitting element Em and a light-receiving element Pd are arranged in a region 1 of each substrate Sn, a drive circuit is provided in a region 2, and the light-emitting element Em and the light-receiving element Pd have certain heights (particularly, see Par. Nos. [0017] to [0025], Figs. 2 to 4).

Therefore, the inventions of claims 1-2, 5-7 are not novel in relation to document 1.

(3) Since the inventions of claims 1-2, 5-7 are not novel, the inventions of their independent claims 3-4, 8-16 will be examined. Claims 3-4, 9 relate to solder, claims 10-13 relate to a specific optical element, and claims 14-16 relate to an electrode pattern. Therefore, their technical features are different.

(4) Consequently, this international application contains at least five inventions involving different special technical features: (i) the inventions of claims 1-2, 5-8; (ii) the inventions of claims 3-4, 9; (iii) the inventions of claims 10-13; (iv) the inventions of claims 14-16; and (v) the inventions of claims 17-26.